



Routed Arrowhead Standards

Introduction

The following standards and specifications have been developed for carved, routed, or engraved National Park Service Arrowhead symbols. These three-dimensional Arrowheads are typically attached to a background or substrate including but not limited to NPS entrance signs, buildings (interior and exterior), lecterns, or other architectural conditions.

Routed Arrowheads must be used in circumstances consistent with current National Park Service policy. Arrowheads may be fabricated in-house or purchased from approved sources. They may be fabricated with computerized equipment or by hand-held mechanical equipment, utilizing a template.

Arrowheads not conforming to the standards set forth in this specification must be authorized through Harpers Ferry Center, Office of National Park Service Identity. For more specific guidance on appropriate uses of the Arrowhead, please refer to Directors Order 52-B.

Materials

High-density Urethane or Polyurethane Foam is the preferred material for creating routed Arrowheads. Minimum strength is 18-lb. For increased durability, vandal resistance, and hardware-mounting strength, a 30-lb. rating (or above) is preferable. Urethane and polyurethane materials must be sealed and finished on all sides per manufacturer's specifications.

Other acceptable materials for exterior routed Arrowheads include:

- Western Red Cedar, dried to a minimum of 12% moisture content prior to fabrication. Other non-laminated woods that meet the performance requirements of exterior grade substrates may be substituted for Western Red Cedar.
- Clear Acrylic, an excellent material for routing, dimensionally stable, durable, superior painted finish, does not require the same finish techniques as the urethane and polyurethane foams.

High-density Plywood and MDF laminated products are not recommended for exterior use. These products have surfaces laminated to a core of wood chips or wood by-products. Routing or cutting this product can cause moisture infiltration and material delamination.

Standard Sizes and Dimensions

Patterns and templates for routing Arrowheads must be prepared from approved digital artwork available from Harpers Ferry Center, Office of NPS Identity. New Arrowhead art has been created as part of the Messaging Project. Arrowheads have been redesigned to ensure consistency across a broad range of media from publications to sign applications. Arrowhead art must not be changed or altered in any way. Refer to the NPS graphic design standards technical series: Number 2, for more information.

Cutter Depth Guidelines

Standards for router cutter depth and edge chamfer have been created based on the overall finished height and thickness of the Arrowhead. These are listed below:

Height	Thickness	Chamfer	Router Depth
12"	1"	1/8"-3/16"	1/32"-1/16"
18"	1 1/2"- 2"	1/8"-1/4"	1/16"-1/8"
24"	1 1/2"- 2"	1/4"	1/8"
36"	2"	1/4"- 5/16"	1/8"-3/16"
48"	2"	3/8"	3/16"

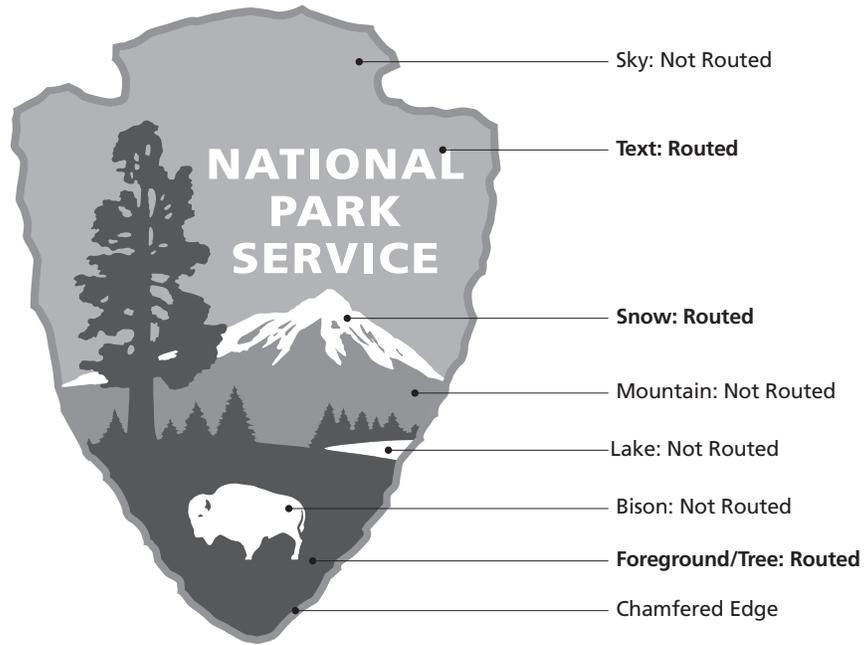
Custom Arrowhead sizes may be fabricated for special conditions. Height and width proportions must remain consistent. Thickness, chamfer, and cutter depths must be proportional to standard sizes.

To create the illusion of depth, Arrowheads may have a second chamfer on the back. Under no circumstances should the front and back chamfer meet on the side of the Arrowhead. See Chamfer Diagrams 1.00, 1.10, and 1.20.



Routing Areas on the Arrowhead

The following illustration indicates areas within the Arrowhead that are routed or engraved. All non-routed areas remain at the surface level of the original material.



Measuring Chamfer Depth

The following diagrams illustrate the method for measuring the depth of the chamfer. The diagrams illustrate a cross section through a 12" Arrowhead. All diagrams are drawn at full scale.

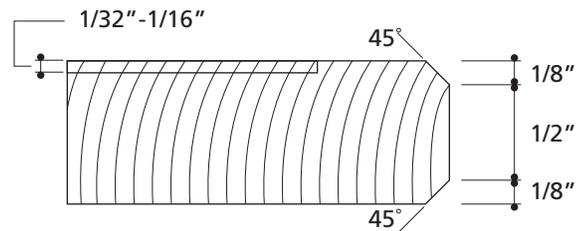


Diagram 1.10: Double Chamfer

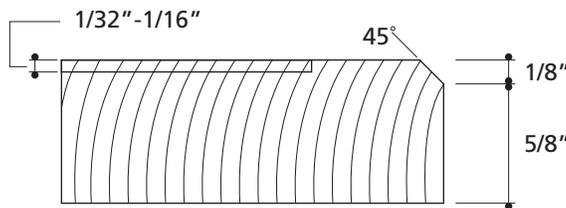


Diagram 1.00: Single Chamfer

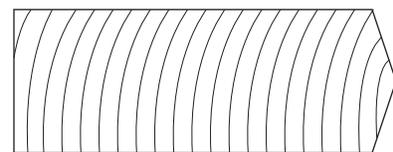


Diagram 1.20: Incorrect Chamfer



Arrowhead Color

Arrowheads are finished in four colors: Medium Rust, Dark Rust, Dark Green, and White.

Paint specification is based on Benjamin Moore Company water-based, semi-gloss, latex acrylic enamel. Other paint systems may be used. For other color systems, comparable colors must be based on an objective criteria such as computer matching.

Paint Specifications

- Medium Rust, matches Pantone #1605
Benjamin Moore
Ultra Base 0964B - YWIX-16, RX-13, GY-8

Sky, all background above the mountain, and sky areas within the tree.

- Dark Green, matches Pantone #553
Benjamin Moore
Ultra Base 0964B - YW-16, WH-2, BK-20 TGIX-16.
RX-1

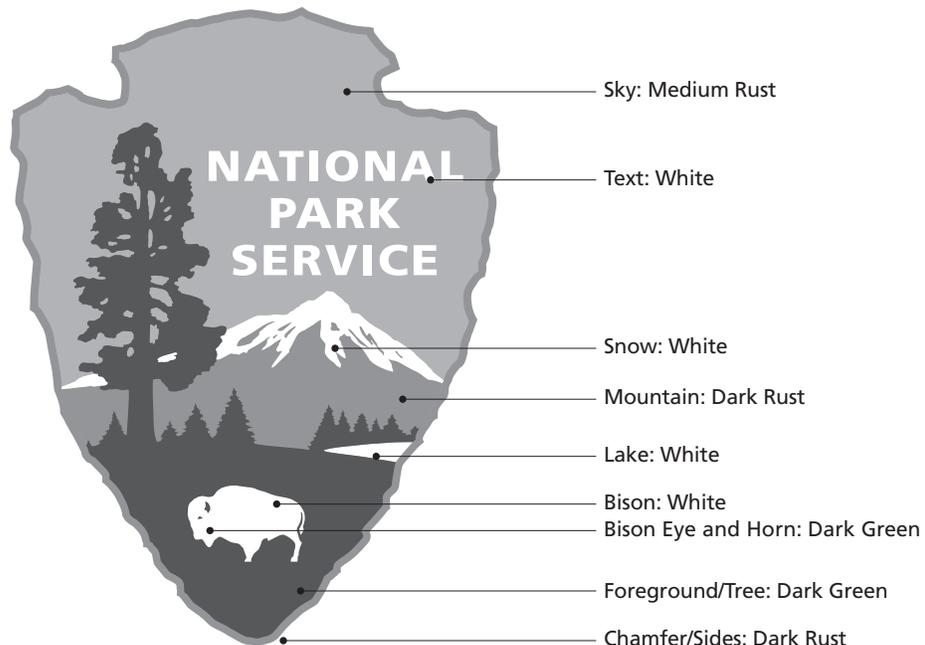
Tree, grass area and trees surrounding bison and lake, bison eye and horn.

- Dark Rust, matches Pantone #1615
Benjamin Moore
Ultra Base 0964B - YWIX-19, RX-25, GY-9, RD-6
TG-5

Lower mountain area, area above the grass, the sides and chamfer and the dark areas within the snow of the mountain.

- White
Benjamin Moore Brilliant White 0964B (Ready Mix)

Text, bison, lake, and snow on mountain (including mountain to left of tree and within the tree).





Mounting

Methods of installation will vary based on the material used and the weight. Diagrams 1.30 and 1.40 illustrate two mounting methods. In addition to these, Z-clips and picture frame hardware may also be used.

For smaller Arrowheads a minimum of two screws is suggested. On larger/heavier Arrowheads a minimum of three is suggested. For interior installation with Urethane and Polyurethane Arrowheads, 3-M VHB 9445 Series tape may be used. Use of VHB will depend on the weight of the Arrowhead. For heavier Arrowheads, VHB tape must be used in conjunction with threaded rods.

Arrowheads must never be mounted with through-bolts. Always verify the structural conditions before mounting the Arrowhead.

Diagram 1.30: Smaller/Lightweight Arrowheads

The following example illustrates the screw location pattern for smaller and lighter-weight Arrowheads and Arrowheads mounted on posts

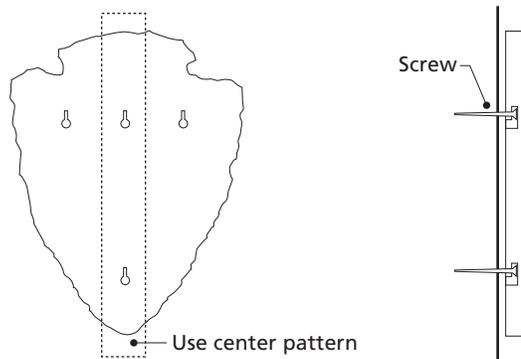
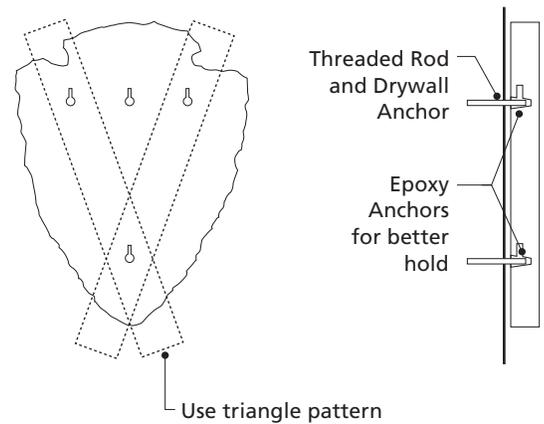


Diagram 1.40: Larger/Heavier Arrowheads

The following example illustrates the hole location pattern for larger and heavier-weight Arrowheads. For these Arrowheads it is best to use a threaded rod.



Procurement

Routed Arrowheads which are not produced in-house may only be purchased from approved sources. Refer to your regional sign coordinator or call the Office of NPS Identity at 304-535-4069 for more information.

Policy Implementation

Existing Arrowheads may be refurbished or repainted (per 1988 sign manual standards) but should be replaced as funding allows.

By May 2006 all National Park Service Arrowheads must be replaced with Arrowheads conforming to this standard.